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8 AIR

Synopsis
This section is promulgated to ensure NOAA facilities, work sites and ships comply with the State Implementation Plans with regard to the discharge of air pollutants by the operation of the facility, work site or ship.

The section applies to all NOAA facilities, work sites and vessels that release pollutants to the air through stationary or mobile sources.

Initial Implementation Requirements:

- **Appoint a Program Coordinator**
- **Compare Site/Facility Operations with the Requirements of this Section**
  - Determine if a State Air Emission Permit is required for the emissions from fixed sources like the heating system exhaust, laboratory fume hoods, gas turbines, medical or other incinerator, printing presses and graphic arts, emergency diesel engine (8.5.1a)
  - If so, determine if the permit has been obtained and if it is current
  - Ensure requirements of the permit are enforced at the facility/workstation
  - Ensure CFC equipment repair is performed by EPA-certified technicians (8.6.1a)
  - Perform radon testing if the facility or workstation is located in a Zone 1 area on the EPA map of radon zones (8.7.1)
  - If radon is detected at a level exceeding 4 pCi/L, perform radon reduction sealing (8.7.2)

Recurring and Annual Task Requirements:

- **Ensure Generator is Properly Maintained**
- **If Radon Reduction Program is Enacted, Periodically Test to Determine Effectiveness**

Checklist

8 Air	YES	NO	N/A
1. Has a Designated Person been appointed? (8.5.1a)	_____	_____	_____
2. Does the facility or work site have any stationary sources of emissions to the environment? (8.5.1)	_____	_____	_____
3. Does the State require the source(s) to have a Clean Air Permit for the emissions? (8.5.1a)	☐	_____	_____
4. If so, has the facility, work site or vessel obtained the necessary permit? (8.5.1a)	_____	☐	_____
- Is it accessible?	_____	_____	_____
- Has the equipment generating the emissions been maintained as required by the permit?	_____	_____	_____
5. Do NOAA employees repair CFC-containing equipment?	_____	_____	_____
- If yes, are these employees certified by the EPA? (8.6.1a)	_____	_____	_____
6. Is the facility or work site located in a Zone 1 area on the EPA map of radon zones? (8.7.1)	_____	_____	_____
- If yes, has a radon test been performed? (8.7.1)	_____	_____	_____

8 AIR

8.1 Purpose and Scope

This section has been promulgated to ensure that in performing their mission, NOAA facilities, work sites and ships do not degrade the air in the area surrounding the site and, as a result, the section applies to all NOAA facilities, work sites and ships.

8.2 Definitions

Designated Person - a NOAA employee assigned the task of coordinating the air emission effort. This role need not be assigned to the Facility Environmental Coordinator. It may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point

Picocurie - a unit of measure used to describe certain types of nuclear radiation. A curie is the amount of any radionuclide that undergoes exactly 3.7×10^{10} radioactive disintegrations per second. A picocurie is one-trillionth (10^{-12}) of a curie, or 0.037 radioactive disintegrations per second.

Picocurie per liter (pCi/L) - A common unit of measurement of the concentration of radioactivity in a fluid (liquid or gas). A picocurie per liter corresponds to 0.037 radioactive disintegrations per second in every liter of fluid.

8.3 Acronyms Employed in This Section

CFCs	-	Chlorofluorohydrocarbons
EPA	-	Environmental Protection Agency
NWS	-	National Weather Service
pCi/L	-	Picocuries per liter
RECO	-	Regional Environmental Compliance Officer
SIP	-	State Implementation Plan

8.4 Regulatory Requirements

8.4.1 Federal/State

Clean Air Act of 1990

The Clean Air Act of 1990 created a program in which the EPA established Federal standards for air quality but allows the States to implement them under an EPA-approved State Implementation Plan (SIP). If a SIP is determined to be unacceptable to the EPA, the EPA can enforce the air program in that State.

8.5 The Clean Air Program

While the Federal clean air program is a very complex regulatory scheme, it relies on several key areas to ensure air quality. These areas include:

a. Permits to control sources of air pollution
b. Establishment of air standards along with determination of how well a geographical area meets those standards.

8.5.1 Permits

Anything that releases pollutants into the air can be considered a "source." Some typical National Oceanic and Atmospheric administration sources of air pollutants include: the exhaust of laboratory fume hoods; gas turbines; medical and other incinerators; printing presses and other graphic arts applications; diesel emergency generators; exhausts of ships, cars, vans and trucks; gasoline-powered machinery or tools; and the facility heating and ventilation equipment.

Sources that remain in one location (e.g. the heating system) are deemed stationary sources while those that move around are called mobile sources (i.e. ships, cars and vans).

To prevent air quality degradation, each State under its State Implementation Plan, will grant a permit to the larger sources of air pollutants whether they be stationary or mobile. The permit will typically include detailed information about what pollutants can be released, how much and even when. It may also include a series of requirements for the permit holder which must be achieved over a pre-set time, which are designed to eventually reduce or eliminate the emissions from the source. The permit can also include requirements for periodic monitoring of the emissions from the source to ensure the limitations set by the permit are not exceeded.

a. NOAA Application

NOAA facilities, work sites and ships that have a stationary emission source like the heating system, a fume hood or a diesel-fueled engine (the ship's engine or the back-up emergency generator) may be required to obtain a State or local government-granted air emission permit.

To ensure compliance, the Designated Responsible Official will designate a NOAA employee as the Air Program Coordinator. This individual must contact the Regional Environmental Coordinator or the Safety/Environmental Coordinator, if applicable, and/or the NOAA RECO to determine:

(1) is a State permit required for the stationary source(s),
(2) if so, has a State permit been obtained and is it current,
(3) if so, where is it located, and
(4) what does it require.

Based on the results of this investigation, the air compliance program for the facility or work site must be reviewed and modified if necessary to comply with the permit conditions.

8.5.2 Attainment of Air Standards

As part of its role in the National Clean Air Program, the EPA has set national standards for air quality and then compared the actual air quality in various geographical areas against these standards. Note that because the air travels across State lines, some of the geographical areas encompass more than one State. Those areas that did not meet the Federal air standards are deemed "non-attainment areas" and were divided into five classes ranging from "marginal" (easy to clean-up) to extreme (very difficult to clean-up).

The EPA then established a timetable for each area to achieve compliance and usually included a series of intermediate goals that must be achieved to demonstrate progress.

To meet these standards, some State and local governments have had to search for new ways to reduce air contaminants. Some have banned or severely limited the use of common products, encouraged the reformulation of paints and inks and/or required a preset percentage of new automobiles sold in the State be powered electrically.

In some areas, wintertime air pollution from wood smoke from wood stoves has become so bad that local governments have had to curtail the use of wood stoves and fireplaces under certain weather and pollution conditions.

Efforts to clean-up the particulates (dust and soot) and other hazardous air pollutants produced by the burning of wood has led to the development of newer designs that emit lower levels of pollutants.

a. NOAA Application

NOAA facilities, work sites and ships will be regulated by their State and local rules. This will include a variety of efforts including using alternative materials and equipment to modification of fueling techniques to encouraging car pooling by employees to assist the area in meeting the national air standards. Remote work sites heated by the burning of wood may require newer models of wood stoves be installed. Additionally, in accordance with Executive Order 13149, NOAA will consider the acquisition of fuel efficient and/or alternative fueled vehicles.

8.6 Ozone-Depleting Substances

After May 1993, consumer products containing chlorofluorohydrocarbons (CFCs) were required to have a label that reads:

WARNING: Contains or manufactured with (name of chemical), a substance which harms public health and the environment by destroying ozone in the upper atmosphere.

Products that contain chemicals that are listed in the Clean Air Act of 1990 as less destructive (or Class II chemicals) must have this label affixed after 2015.

Executive Order 13148 requires the prohibition from the procurement and use by Federal Agencies of products containing a Class I ozone-depleting substance by December 31, 2010. Class I ozone-depleting substances include halons, chlorofluorocarbons, carbon tetrachloride and methylchloroform as identified by the EPA.

8.6.1 Use/Repair of CFC Equipment

Under the Clean Air Act, anyone who maintains, services or repairs refrigerators, freezers, air conditioners, heat pumps, dehumidifiers, water coolers and other appliances that use refrigerant must be certified by the EPA. Depending on the equipment serviced, the EPA has created four categories - Type I, Type II, Type III and Universal - Technician. Until certified, a worker is deemed an apprentice and as such, is only allowed to work on this equipment "when closely and continually supervised by a certified technician."

a. NOAA Application

No NOAA employee should attempt to repair or service any equipment containing a CFC unless certified by the EPA for this work. Contractors employed by the NOAA must be able to provide documentation or certification that their technicians are EPA-certified.

8.6.2 Equipment Containing CFCs and Other Ozone-depleting Chemicals

Prior to the enactment of the Clean Air Act of 1990, a number of products were sold that contained CFCs and other ozone-depleting chemicals. These items range from the spray circuit board cleaner that uses freon or a novelty item like a glass bird that is filled with carbon tetrachloride that "sips" from a glass of water, to an old air conditioner. As they are identified, these items must be either returned for recycling or sent for proper disposal.

8.7 Radon

Radon is a radioactive gas that is produced from the natural decay of uranium that is found in nearly all soils. It has been shown to cause lung cancer. It typically moves up through the soil and releases into the air where it is normally dissipated or diluted to harmless levels.

When a building is erected, cracks and other holes in the foundation allow the radon gas to enter the structure. The structure then traps the gas allowing the concentration to build. While radon is more of a homeowner problem, it has created difficulties for at least one NOAA facility and hence has been included in this section.

8.7.1 Radon Zones

To help identify areas with high radon potential, the U.S. EPA has developed a map of radon zones. The map can be used to identify areas that have a higher probability of radon occurring. The map is available online at http://www.epa.gov/iaq/radon/zonemap.html.

Using this map, the Environmental Focal Point or Air Program Coordinator can estimate the potential need to perform radon sampling at a NOAA facility or work site. Facilities in a Zone 1 Area [average indoor radon screening level greater than 4 pCi/L (picocuries per liter of air sampled)] or facilities in areas of the world not included on the map should perform a radon test to determine if a problem exists at the facility.

The EPA recommends remedial action be scheduled according to the following priority scheme:

Radon Levels (pCi/L)	Action
0 to 4	No action required
4 to 20	Mitigation within 5 yr.
20 to 200	Mitigation within 6 mo.
>200	Mitigation within 3 wk.

8.7.2 Remedial Action

Should a radon level in excess of 4pCi/L be detected in a NOAA facility or work sites, a variety of methods can be used to reduce the radon level. Just sealing cracks in floors and walls may help. In other cases, a system called "sub slab depression" which uses pipes and fans may be required.

The EPA publication, "Consumer's Guide to Radon Reduction," available from the State Radon Office or online at http://www.epa.gov/iaq/radon/pubs/consguid.html offers several suggestions and techniques. Although aimed at the homeowner, the information provided can be used by NOAA facilities and work sites.

Once remedial work is complete, retest on an annual basis to ensure the effectiveness of the effort.

8.8 Responsibilities

8.8.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

8.8.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall ensure that procedures are developed at regional headquarters or operating unit facilities.

c. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

d. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

8.8.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure that sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. May consider testing NOAA field offices if located in areas denoted by the EPA Radon Map as having an average indoor radon screening level greater than 4 pCi/L.

d. Shall ensure NOAA employees follow the requirements of this section.

e. Shall review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

8.8.4 Facility Environmental Coordinator, Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure that any tasks delegated to them by the Designated Responsible Official are implemented in accordance with the requirements of this section.

8.8.5 Employees

a. Individual employees affected by this section are required to read, understand and comply with the requirements of this section.

b. Report all violations of the requirements of this section to their supervisor or Environmental Focal Point.

8.9 References

Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

8.9.1 U.S. Environmental Protection Agency

a. "Map of Radon Zones," http://www.epa.gov/iaq/radon/zonemap.html

b. "Consumer's Guide to Radon Reduction," http://www.epa.gov/iaq/radon/pubs/consguid.html